SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Identification of the substance
Ethylenediaminetetraacetic acid tetrasodium salt dihydrate

Article number
1410

Registration number (REACH)
This information is not available.

EC number
200-573-9

CAS number
10378-23-1

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses:
laboratory chemical

1.3 Details of the supplier of the safety data sheet
Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet:
Department Health, Safety and Environment

E-mail (competent person):
sicherheit@carlroth.de

1.4 Emergency telephone number
Emergency information service
Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Classification acc. to GHS</th>
<th>Hazard class</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.10 acute toxicity (oral)</td>
<td>(Acute Tox. 4)</td>
<td>H302</td>
<td></td>
</tr>
<tr>
<td>3.11 acute toxicity (inhal.)</td>
<td>(Acute Tox. 4)</td>
<td>H332</td>
<td></td>
</tr>
<tr>
<td>3.3 serious eye damage/eye irritation</td>
<td>(Eye Dam. 1)</td>
<td>H318</td>
<td></td>
</tr>
</tbody>
</table>
For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Danger

Pictograms

Hazard statements

H302+H332 Harmful if swallowed or if inhaled.
H318 Causes serious eye damage.

Precautionary statements

Precautionary statements - prevention

P280 Wear protective gloves/eye protection.

Precautionary statements - response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)

H318 Causes serious eye damage.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.

2.3 Other hazards

There is no additional information.
SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Ethylenediaminetetraacetic acid tetrasodium salt dihydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC number</td>
<td>200-573-9</td>
</tr>
<tr>
<td>CAS number</td>
<td>10378-23-1</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C_{10}H_{12}N_{2}Na_{4}O_{8} * 2 H_{2}O</td>
</tr>
<tr>
<td>Molar mass</td>
<td>416.2 g/mol</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower.

Following eye contact
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion
Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed
Irritant effects, Cough, Nausea, Vomiting, Dyspnoea, Risk of serious damage to eyes

4.3 Indication of any immediate medical attention and special treatment needed
none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet
Combustible.
In case of fire may be liberated: nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
For non-emergency personnel
Provide adequate ventilation. Avoid contact with eyes.

6.2 Environmental precautions
Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up
Advices on how to contain a spill
Covering of drains.
Advices on how to clean up a spill
Take up mechanically. Control of dust.
Other information relating to spills and releases
Place in appropriate containers for disposal.
Reference to other sections
Hazardous combustion products: see section 5. Personal protective equipment: see section 8.
Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Measures to prevent aerosol and dust generation.
• Measures to prevent fire as well as aerosol and dust generation
Removal of dust deposits.
Advice on general occupational hygiene
Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed. Store in a dry place.
Incompatible substances or mixtures
Observe hints for combined storage.
Consideration of other advice
• Ventilation requirements
Use local and general ventilation.
Recommended storage temperature: 15 - 25 °C.

No information available.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
National limit values
Occupational exposure limit values (Workplace Exposure Limits)
not relevant

8.2 Exposure controls
Individual protection measures (personal protective equipment)

Eye/face protection
Use safety goggles with side protection.

Skin protection
• hand protection
Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
• type of material
NBR (Nitrile rubber)
• material thickness
>0,11 mm.
• breakthrough times of the glove material
>480 minutes (permeation: level 6)
• other protection measures
Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection
Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White). Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Environmental exposure controls
Keep away from drains, surface and ground water.
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**
- Physical state: solid (crystalline)
- Colour: white
- Odour: odourless
- Odour threshold: No data available

**Other physical and chemical parameters**
- pH (value): 10.7 - 11.7 (water: 10 g/l, 23 °C)
- Melting point/freezing point: >300 °C
- Initial boiling point and boiling range: This information is not available.
- Flash point: >100 °C
- Evaporation rate: no data available
- Flammability (solid, gas): Non-flammable

**Explosive limits**
- lower explosion limit (LEL): this information is not available
- upper explosion limit (UEL): this information is not available
- Explosion limits of dust clouds: these information are not available

**Vapour pressure**: This information is not available.

**Density**
- This information is not available.
- 700 - 860 kg/m³

**Relative density**: Information on this property is not available.

**Solubility(ies)**
- Water solubility: 580 g/l at 20 °C

**Partition coefficient**
- n-octanol/water (log KOW): This information is not available.
- Auto-ignition temperature: >200 °C
- Decomposition temperature: >240 °C
- Viscosity: not relevant (solid matter)

**Explosive properties**: none

**Oxidising properties**: none

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Malta (en)
SECTION 10: Stability and reactivity

10.1 Reactivity
This material is not reactive under normal ambient conditions.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
Violent reaction with: Strong oxidiser, Strong acid

10.4 Conditions to avoid
Keep away from heat. Decomposition takes place from temperatures above: >240 °C.

10.5 Incompatible materials
aluminium

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>1.913 mg/kg</td>
<td>rat</td>
<td>ECHA</td>
<td>anhydr.</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitisation
Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.
Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed
  abdominal pain, nausea, vomiting, Liver and kidney damage

• If in eyes
  strongly irritant, corneal opacity, Causes serious eye damage

• If inhaled
  Irritation to respiratory tract, cough, breathing difficulties, Dyspnoea

• If on skin
  Frequently or prolonged contact with skin may cause dermal irritation

Other information
  None

SECTION 12: Ecological information

12.1 Toxicity
  acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

12.2 Process of degradability
  Information on this property is not available.

12.3 Bioaccumulative potential
  Data are not available.

12.4 Mobility in soil
  Data are not available.

12.5 Results of PBT and vPvB assessment
  Data are not available.

12.6 Other adverse effects
  Hazardous to water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
  This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
  Sewage disposal-relevant information
  Do not empty into drains.

13.2 Relevant provisions relating to waste
  The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks
  Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.
SECTION 14: Transport information

14.1 UN number (not subject to transport regulations)
14.2 UN proper shipping name not relevant
14.3 Transport hazard class(es) not relevant
   Class 
14.4 Packing group not relevant
14.5 Environmental hazards none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user
There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations
   • Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)
     Not subject to ADR, RID and ADN.
   • International Maritime Dangerous Goods Code (IMDG)
     Not subject to IMDG.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
   Relevant provisions of the European Union (EU)
   • Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)
     Not listed.
   • Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)
     Not listed.
   • Regulation 850/2004/EC on persistent organic pollutants (POP)
     Not listed.
   • Restrictions according to REACH, Annex XVII
     not listed
   • List of substances subject to authorisation (REACH, Annex XIV)
     not listed
   Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II
     not listed
   Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)
     not listed
Ethylenediamine tetraacetic acid tetrasodium salt dihydrate ≥99 %

article number: 1410

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)
not listed

National inventories
Substance is listed in the following national inventories:
- EINECS/ELINCS/NLP (Europe)

15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

Key literature references and sources for data
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>harmful if swallowed</td>
</tr>
<tr>
<td>H318</td>
<td>causes serious eye damage</td>
</tr>
<tr>
<td>H332</td>
<td>harmful if inhaled</td>
</tr>
</tbody>
</table>
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.